Pre Lab Assignment
LAB 6 – UML Design using StarUML

Course Code: CS F213 Date: 22 SEP 2018

Course Name: Object Oriented Programming

StarUML is used to create UML diagrams. We are going to use StarUML to design a class diagram and then generate the structure created in the form of Java classes.

Here is your problem statement.

You are going to create a class diagram based on Lab 5 which describes the type of people in a school. This pre-lab statement is simplified further for easy implementation. There are three entities

1. **SchoolMember**
   This is the base class for this application. Each SchoolMember object has three private variables **address (String)**, **name (String)** and **chanceOfPromotion (int)**. Each SchoolMember object also has the following methods.
   - **promoted:** This public method returns an **int** result which indicates whether the SchoolMember is promoted. The method does not take any input arguments.
   - **setChanceOfPromotion:** This protected method returns and **int** result which indicates whether the SchoolMember has a chance of promotion or not. The method does not take any input arguments.
2. **Teacher:** This class represents a special type of SchoolMember entities.
   The Teacher class contains a private **MAX_NO_OF_COURSES** (int) attribute which sets the maximum number of courses that can be taken by any Teacher object. Each Teacher object also contains two private attributes: **courses** (array of Strings) which contains all courses being handled by the Teacher object and **numCourses** which contains the number of courses being taken by the Teacher object. Each Teacher object has the following methods:
   - **addCourse:** This public method accepts **courseName(String)** and **credit(int)** and returns a **boolean** value indicating if the course was successfully added to the object.
   - **promoted:** This public method returns an **int** result which indicates whether the Teacher is promoted. The method does not take any input arguments.
3. **Student:** This class also represents a special type of SchoolMember entities.
   The Student class contains a private **MAX_NUMBER_OF_COURSES** (int) attribute which sets the maximum number of courses that can be taken by any Student object. Each

Student object also contains two private attributes: **courses** (array of Strings) which contains all courses that a Student object has registered for and **numCourses** which contains the number of courses being taken by the Student object. Each Student object has the following methods:

- **enoughCourseSlots:** This private method returns a **boolean** value indicating if there are enough slots left to take courses. This method does not take any arguments.
- **getNumberOfCourses:** This public method returns the number of course taken by the Student Object. This method does not accept any input arguments.

Points to note while using StarUML

1. The Model Explorer should be consistent with the UML drawn. If there is a discrepancy, remove the anomaly from the Model Explorer.
2. In the Model Explorer you find default names assigned to the Project as Untitled and the model as Model. Rename Model to java.
3. When using the Java extension for generating code, select the repository directory. This creates all necessary java files within the java directory which can then be pushed and committed before evaluation in Autolab autograder.